DOCUMENT RESUME

ED 394 535 JC 960 252

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TITLE Faculty Opinions Regarding the Philosophical Principles of Total Quality Management (TQM).
PUB DATE 28 Apr 96
NOTE 23p.; Paper presented at the Annual Meeting of the Georgia Academy of Sciences (73rd, Albany, GA, April 28, 1996).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Administrator Attitudes; Administrator Effectiveness; College Planning; Community Colleges; *Educational Improvement; *Educational Quality; Faculty College Relationship; Organizational Objectives; *Participative Decision Making; *Teacher Attitudes; *Total Quality Management; Two Year Colleges
IDENTIFIERS *DeKalb Community College GA

ABSTRACT

The 14 points of the Total Quality Management (TQM) model can be distilled into the following 5 main guiding principles: establish a moral purpose for the institution, use cooperative efforts instead of individual efforts, stop the use of inspection (testing) to improve students and teachers, continuously improve the system and its products, and implement employee education and self-improvement efforts. A study was conducted by DeKalb College (Georgia) to determine the agreement of faculty and administrator attitudes with these principles prior to receiving training in TQM. Results, based on survey responses from 44 faculty members and 3 administrators, included the following: (1) with respect to the abilities for which administrators were selected, the ability to chastise mistakes or poor performance received the highest rating, an outcome which does not follow the view in TQM of administrators as facilitators; (2) with respect to situations which compromise learning, respondents rated creating fear by giving grades the highest and large class size the lowest; (3) only 2 respondents disagreed with the statement that faculty should participate in the governance of the college; and (4) 22 respondents agreed and 16 disagreed that testing after course completion was the best method for maintaining quality instruction, while 41 agreed that continuously assessing learning during the course was the best method. A copy of the survey is included. Contains 23 references. (TGI)

Faculty Opinions Regarding The Philosophical Principles Of Total Quality Management (TQM)

by

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FACULTY OPINIONS REGARDING THE PHILOSOPHICAL PRINCIPLES OF TOTAL QUALITY MANAGEMENT (TQM)

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ABSTRACT

Deming's 14 philosophical tenets of TQM, also called Continuous Quality Improvement, can be distilled into 5 guiding principles. Forty-four faculty members and 3 administrators were questioned concerning these principles, previous to education of the faculty in TQM. Guiding principles follow. First - establish a moral purpose of the institution. Many educational reformers have used TQM to justify open admission policies to encourage egalitarian inclusiveness. Consistent with the University System of Georgia's policy dictating rigid developmental studies requirements, faculty favored 2-1 retaining larger numbers of higher performing students rather than simply retaining a larger number of students. Second - emphasize cooperation instead of individual efforts. Faculty opined that they should participate in college management, but, on the other hand, were not prepared to sacrifice time spent for personal research or to be recognized for their institutional team contributions rather than those to their discipline. They were divided whether competition for merit increases in pay were beneficial to learning by students. Third - eliminate inspection (testing) of the product to maintain quality. Faculty were divided in opinion about how testing and giving grades affect learning. Fourth - continuously improve the system and its product. Most faculty indicated that continuous assessment of learning was better than periodic testing. Fifth - implement employee education and self-improvement. Faculty opined 3-1 that continuous improvement of skills should be evident to maintain tenure.

INTRODUCTION

W. Edwards Deming (1,2), deceased, was honored for his contributions as a management theorist to the phoenix-like resurgence of postwar Japanese industry and for the recent successes of American corporations such as Ford, General Motors and Motorola. Deming held a Ph.D. in mathematical physics from Yale, but called himself an "consulting statistician," gaining fame for expanding Shewhart's concept of the statistical control of production (1). Some educational reformers (2,3,4,5) have followed Deming's lead and attempted to apply to education the principles of Total Quality Management (also known by the less pejorative term, Continuous Quality Improvement). Deming (2) defined quality as follows: "a service or product possesses quality if it helps somebody and enjoys a good and sustainable market." Seymour (6) thought that colleges must act to have intellectually superior faculty, well-prepared students, and excellent funding for salaries and facilities. But, Seymour thought that to quality was a verb of action, not a noun of outcome. Deming asserted that we should also have a moral purpose and a will to improve those resources continually (1,2,4).

Deming (1,2,4) rejected output-driven systems and, therefore, Peter Drucker's Management by Objectives (7). He likened MBO to "driving by looking in a rear view mirror" and attempting to achieve quality through inspection of the product. "Outcome based education," Deming thought, is an oxymoron that confuses training

(teaching prescribed material to accomplish a goal) with education (the development of reasoning). He gave examples of goal setting by educational institutions that ignored the processes needed to attain them (2). Instead, Deming propounded an Aristotelian distinction between goals as intentions separate from actions, and actions as the sole driving force of improvement (4). Does intent precede action as in MBO, or does action precede intent as in TQM (8)? For Deming, the answer was action! Deming assumed this in favoring process-driven management models that build quality into the product while attempting to achieve "zero defects." Aristotle believed that one did not live a happy life by intending to be virtuous, but by acting virtuously (4).

The term plan-do-check-act (1) expresses a formula for doing quality management. Innovations are planned carefully by teams, changes are tested, the processes are checked statistically for variation, and the changes are carried out. Retesting occurs periodically and efforts for the continuous improvement of processes are made. Considering Deming's training in science, its not surprising that plan-do-check-act resembles the scientific method!

Deming's approaches depart from F.W. Taylor's (3,4) nearly century-old "scientific factory model" of mass production. Gray (3) admonished, "Taylorism [as commonly interpreted [1]] is the belief that both the preordained order and the maximization of profits dictate that the fittest should manage as benevolent dictators and that the rest should work ... consultations between the two groups are discouraged, since these interactions threaten the authority (if not the bloated paychecks) of the managing class." For education, the factory model has led to the replacement of collegiality with a hierarchical management system; especially in small colleges, 2-year colleges, and public schools. The factory model has led to the organization of learning into courses and classes, the assignment of instructors to specific classes and, more recently, the passive, lecture-based learning carried to an extreme in auditorium size classrooms. Drucker (9) said that in a hierarchical management system, teachers would be treated as "assembly line workers" and not as

[1] Drucker, however, gives credit to Taylor for the principle of participative management and noted how both managers and unions voiced their opposition to it. This is ironic, for participative management is also frequently not done in MBO as Drucker intended See "Post Capitalist Society,. p. 34-40, HarperCollins, N.Y., 1993, and Aliff (7, 10).

professionals. Teachers objecting to the idea of management, should reflect on how we are, in fact, being managed and how our activities could be better managed!

Fourteen Points of Total Quality Management [after Holt (4)]

1. **Establish a purpose for improving the product and service in order to stay in business and provide jobs.**
2. **Adopt a new philosophy of leadership and cooperation.**
3. **Cease dependence on inspection to achieve quality.**
4. **Examine proposed innovations carefully.**
5. **Improve constantly.**
6. **Train employees on the job.**
7. **The aim of leadership is to help people do a better job; leaders facilitate the process changes planned and tested by teams.**
8. **Drive out fear and promote respect and trust. [Eliminate *theory x* management, that is the belief that people must be threatened and cajoled to work. Instead, adopt *theory y* management - the belief that people are motivated intrinsically to do a good job.]**
9. **Break down barriers between individuals and departments. Cooperate instead.**
10. **Eliminate slogans and exhortations calling for better performance.**
11. **Eliminate production quotas and goals. Get rid of Management by Objectives.**
12. **Seek joy in work. Eliminate merit pay.**
13. **Institute a program of education and self-improvement. [The meaning here is not job training as in #6]**
14. **Everyone in the organization will work to transform the goal-based organization to a process-based one.**

Since the Fourteen Points were developed primarily for business use, I propose to distill the 14 into 5 guiding principles that will be more readily understood and applied by educators.

The Five Guiding Principles and Implications of the Quality Management of Education

1. Establish a moral purpose for the institution.

Mission statements should address how the college or university will educate students on the meanings of freedom, slavery, and the benefits of cooperative efforts to remedy the problems of our society (7). A community of learners would replace a community of students, teachers and bosses (10,11).

In Science education, the traditional emphasis on the "survival of the fittest" students would be replaced by a more egalitarian inclusiveness that will serve populations of students who usually do poorly when learning science. The A.A.A.S. sponsored "Project 2061" is dedicated to this end (12). More interdisciplinary and independent studies would occur. Passive lecture and memorization of principles (covering the subject) by students would be deemphasized and more active learning experiences, including applications of the scientific method would be included in course work. Project 2061 recommended teaching concepts instead of facts (12,13).

The Teaching Paradigm vs. the Learning Paradigm

[after Barr and Tagg, (11)]

Teaching Paradigm	Learning Paradigm
Transfer knowledge (atomistic)	Elicit learning by discovery and construction (wholistic)
Assess and improve teaching	Assess and improve learning
Quality of resources	Quality of products
Offer courses	Offer learning environments
Covering material	Specified learning results
Grading or ratings of students and instructors within the class	External (outside the class) and public evaluations of learning

2. Use cooperative efforts instead of individual efforts.

The psychology of TQM asserts that competition and personal awards undermine team work; therefore, they would be eliminated (3,4,5). Instructors would be recognized only for their contributions to teamwork, performance appraisals of faculty by administrators would cease (6). Why? Because TQM theory asserts that such undermine trust and collegiality. Participative management systems including faculty would become extant and hierarchical management systems extinct.

3. Stop the use of inspection to improve students and teachers.

Implications include first the drastic reduction or elimination of block testing and grading of performance (4). Midterm exams and final exams might be eliminated. The Graduate Record Exam, for instance, would not be used to test on senior class competence in an ideal TQM institution. Outcome-based (goal-oriented) education would cease. Second, TQM asserts that grading of students, performance appraisals of teachers by administrators, and student evaluations of the performance of instructors produce "fear in the work place." Deming (4) observed, based on his experience with graduate students, that grades were indications of variation within an artificial testing process and useless as predictors of performance on the job. Egalitarian

reformers (3,4,5,12) have seized upon the principle of eliminating grades in order to enhance the self esteem of minority and other disadvantaged students. Are testing and grading a form of *theory x* management of students? Gray (3) equated grading and giving awards to students with "social Darwinism" or "cultural elitism," and added that we teach these ethics in schools.

TQM views a 40% graduation rate of entering students this way: there is 40% product and 60% educational "scrap." Scrap in a factory must be thrown away or reworked. Therefore, some of the 60% will be reworked at other institutions such as technical schools where of focus and practicality appeal to these "losers" of education, or, they may be lost to higher education altogether. Quality management asks us to rethink student evaluations and to recommend students to other classes and to employers, not according to accumulated grades, but on the faculty member's reports of the quality of the student's performance.

4. Continuously improve the system and its products.

Continuous improvements of the processes of learning would replace attempts to improve teaching techniques as a focus of the community. Innovations would be planned, tested, and retested. Learning by students would be assessed continuously and anonymously (14). Administrators would assess the processes of learning rather than teaching personas (14).

5. Implement employee education or self-improvement.

Deming (1, 2) encouraged acquiring both job skills training and an education that improves reasoning (see Deming's points #6 and #13). Would tenured faculty be compelled to participate? Learning is lifelong -- right? The information age will cause profound changes in education. Distance learning may compel us to put at least a part of our courses on the "World Wide Web" and CD-ROM. Not only are the challenges to our academic freedom perilous, but we will be challenged to learn anew. The idea is threatening. We can expect to go through a typical cycle of anger, denial, bargaining, depression, acceptance and finally change, just as someone does when one's marriage breaks up and, after the cycle runs its course, one remarries happily.

In the learning institution of the future, we all will be learning alongside our students.

DeKalb College Faculty and Administration Questionnaire on College Governance and Total Quality Management (Continuous Quality Improvement) Principles

Indicated administrative unit/discipline as follo s (only one as principal activity): [44 responses]

Administration	3
Allied Health	3
Business	1
Developmental Studies	4
English as Second Language	1
Fine Arts	1
Foreign Languages	1
Humanities	7
Learning Resources	3
Mathematics	5
Physical Education	2
Science	8
Social Science	3
Unknown	2

1. **Please rank the following as to your perception of the importance of each item as a currently applied focus of administrators in evaluating instructors. Please do not assume that one category is necessarily equal in value to another in application.**

Criterion	Average rank (1-5)
Teaching by Faculty	1.47
Learning by Students	1.89
Learning by Faculty	3.45
Popularity of Instructors	3.74
Difficulty of Course	3.82

Comment - DeKalb College is a two-year college that primarily serves to prepare students for transfer to a four-year institution. For that reason, teaching has been our traditional focus. However, a TQM approach would be process oriented (1) and therefore learning would become the primary focus (10, 11).

2. **Administrators are selected on the basis of their abilities to: (Please rank)**

Criterion	Average rank
Control Situations and Personnel	2.90
Lead Faculty Members to Innovate	2.91
Coach Better Performance	3.24
Serve Faculty Members by Acquiring Resources	3.31
Facilitate Faculty Members Efforts to manage	3.83
Chastise mistakes or poor performance	5.09

Comment - TQM/CQI prescribes that administrators become facilitators of problem-solving teams of faculty members (6). Coaching to attain improved performance of faculty members on an individual basis is a strategy more appropriate to Management by Objectives (MBO) - a more hierarchical system of management (7). TQM/CQI is dedicated to achieving quality by continuously improving educational processes rather than personalities (1, 2, 4).

3. Learning is compromised by: (Please rank)

Criterion	Average rank (1-5)
Large Class Size	1.83
Passive, Lecture-based Activities	2.42
Lack of Student's Control Over Subject Matter	3.41
Competition for Grades and Awards	3.61
Creating Fear by Giving Grades	3.71

Comment - Many TQM/CQI authors have attacked the passive lecture method that produces learning by memorization (facts put into short term memory) and assert that active learning is more process-oriented (14). In Science we call our active learning experiences labs! TQM/CQI guru W.E. Deming's work (1, 2, 4) leads us to believe that testing, grading performance, and competition for grades produce "fear in the work place." Therefore TQM/CQI authors have proposed that we reduce or eliminate testing and grading and improve the self esteem of our students (3, 4, 5, 12, 13, 14).

4. The faculty should participate in the governance of the college.

a.)	**Agree strongly**	**24**	**b.)**	**Agree somewhat**	**18**
c.)	Disagree somewhat	2	d.)	Disagree strongly	0
e.)	No opinion	0			

Comment - Many faculty don't like to think of themselves as being managed. TQM/CQI is designed to allow faculty to manage themselves!

5. The faculty know better how to manage the college than do administrators.

a.)	Agree strongly	1	b.)	Agree somewhat	9
c.)	**Disagree somewhat**	**20**	**d.)**	**Disagree strongly**	**11**
e.)	No opinion	3			

Comment - These faculty expect and apparently trust administrators to know and apply management principles.

6. The best way to manage a problem when it appears is to find out who is to blame and correct that person or group.

a.)	Agree strongly	18	b.)	Agree somewhat	23
c.)	**Disagree somewhat**	**2**	**d.)**	**Disagree strongly**	**1**
e.)	No opinion	0			

Comment - TQM/CQI proposes to focus on improving processes not personalities. Deming and Seymour (1,6) attribute from 85% to 94% of problems to processes rather than personnel.

7. The best way to manage problems is to correct the process or system which produced them.

a.)	**Agree strongly**	**18**	**b.)**	**Agree somewhat**	**23**
c.)	Disagree somewhat	2	d.)	Disagree strongly	1
e.)	No opinion	0			

Comment - Faculty agree with this TQM/CQI principle.

8. It is more expedient to correct problems as they occur rather than creating a process to prevent them from occurring.

a.)	Agree strongly	3	b.)	Agree somewhat	1
c.)	**Disagree somewhat**	**15**	**d.)**	**Disagree strongly**	**22**
e.)	No opinion	0			

9. Maintenance of the quality of instruction is best achieved by the assessment of learning by testing <u>after the completion</u> of the course or block of subject matter.

a.)	**Agree strongly**	**1**	**b.)**	**Agree somewhat**	**21**
c.)	**Disagree somewhat**	**7**	**d.)**	**Disagree strongly**	**9**
e.)	No opinion	0			

Comment - Faculty are nearly evenly divided as the effectiveness of final exams as a measure of quality. Apparently, support of block testing is not quite as strong as opposition to it. Deming also believed (2, 4) that testing in education is "an attempt to achieve quality by inspection" rather than to "build it into the product."

10. Maintenance of quality of instruction is best achieved by <u>continuously</u> assessing the learning <u>of individuals</u> during the course.

a.)	**Agree strongly**	**15**	**b.)**	**Agree somewhat**	**26**
c.)	Disagree somewhat	1	d.)	Disagree strongly	1
e.)	No opinion	0			

Comments - Angelo and Cross, in their book "Classroom Assessment Techniques," have demonstrated the process of assessing learning rather than assessing teaching (14).

11. Maintenance of the quality of instruction is best achieved by continuously and anonymously assessing learning during the course.

a.)	**Agree strongly**	**1**	**b.)**	**Agree somewhat**	**21**
c.)	**Disagree somewhat**	**7**	**d.)**	**Disagree strongly**	**9**
e.)	No opinion	4			

Comment - Angelo and Cross (14) take a TQM/CQI approach and assess learning anonymously rather than creating winners and losers by grading (12).

12. Because students learn from failure as well as success, one cannot design educational processes with "zero defects."

a.)	**Agree strongly**	**17**	**b.)**	**Agree somewhat**	**12**
c.)	Disagree somewhat	3	d.)	Disagree strongly	0
e.)	No opinion	11			

Comment - An underlying assumption of TQM/CQI is that processes can, as in a TQM factory (1), be improved to achieve "zero defects." If students learn from failure as well as success, this assumption is not valid (15).

13. Assuming the validity of the term, students are the only "customers" of our courses.

a.)	Agree strongly	3	b.)	Agree somewhat	10
c.)	**Disagree somewhat**	**13**	**d.)**	**Disagree strongly**	**15**
e.)	No opinion	3			

Comment - TQM/CQI focuses on determining and fulfilling "customer" needs. This has led to some confusion about who are the "customers" of a college course. Deming is quoted by Holt (16) as having said, "We don't

have customers in education!" Holt added that "his [Deming's] ideas have nothing to do with defining conformity."

14. Assuming the validity of the term, as "customers" students are always right.

a.)	Agree strongly	0	b.)	Agree somewhat	2
c.)	**Disagree somewhat**	**8**	**d.)**	**Disagree strongly**	**32**
e.)	No opinion	0			

Comment - Faculty experience concludes that the neophytic student is not the only or even the best source of information on "customers" needs for education (17).

15. The business term "customers" for students is correctly applied to education.

a.)	Agree strongly	1	b.)	Agree somewhat	15
c.)	**Disagree somewhat**	**12**	**d.)**	**Disagree strongly**	**15**
e.)	No opinion	1			

Comment - There is a problem with business metaphors applied uncritically to education. Are students "workers, "customers, "consumers," or persons? See Kohn (5).

16. A college is metaphorically a "factory of education."

a.)	Agree strongly	2	b.)	Agree somewhat	13
c.)	**Disagree somewhat**	**14**	**d.)**	**Disagree strongly**	**13**
e.)	No opinion	2			

Comment - Course-based education is organized and funded according to Taylor's 19th century "scientific factory" model (3, 4).

17. The educational efficiency of a collegiate "factory of education" (please assume the validity of the term) is usually measured by the largest number of students served by the fewest number of faculty.

a.)	Agree strongly	4	b.)	Agree somewhat	5
c.)	**Disagree somewhat**	**10**	**d.)**	**Disagree strongly**	**22**
e.)	No opinion	3			

Comment - Why are hundreds of first-year students crammed into an auditorium for lecture?

18. The educational efficiency of a college is best measured by recording a larger number of higher performing students retained by the institution.

a.)	**Agree strongly**	**11**	**b.)**	**Agree somewhat**	**17**
c.)	Disagree somewhat	8	d.)	Disagree strongly	7
e.)	No opinion	1			

Comment - The quality of the product is very important to a TQM/CQI organized educational institution. Nevertheless, if one sets goals for performance, one is doing MBO not TQM (2, 7).

19. The educational efficiency of a college is best measured by recording a larger number of students retained by the institution, regardless of their level of performance.

a.)	Agree strongly	0	b.)	Agree somewhat	8
c.)	**Disagree somewhat**	**17**	**d.)**	**Disagree strongly**	**18**
e.)	No opinion	1			

Comments - Egalitarians (10, 12, 13) may be philosophically inclined to compromise quality in order to achieve social goals and justice. On the other hand with TQM, Egalitarian institutions can apply a "value added"

approach and evaluate progress in learning from the entrance to graduation of it's students.

20. Assuming the validity of the term "customers" for students, which of the following are also customers of an Anatomy and Physiology course for pre-health professions by reason of having a vested interest in the quality of education in A and P (check all that apply).

a.)	**Nurses**	**35**	**b.)**	**Hospitals**	**39**
c.)	**Instructors**	**21**	**d.)**	**Administrators**	**23**
e.)	**Alumni**	**21**			

Comments - I favor a broad application of the term "customer" for there are many groups as having a vested interest in the quality of learning (10). Instructors have a discipline-based interest in quality. Alumni view themselves as invested in the continuing quality of learning or its improvement by way of identification with the school. TQM/CQI promulgates a team approach to learning that naturally includes instructors and administrators, and an external and expanded assessment of needs extending to the "community of learners." Professional colleagues and the employers of our graduates would be included in assessment (18).

21. In order to participate in college governance, faculty members should sacrifice time spend on professional research, growth and development.

a.)	Agree strongly	3	b.)	Agree somewhat	12
c.)	**Disagree somewhat**	**17**	**d.)**	**Disagree strongly**	**11**
e.)	No opinion	1			

Comment - In response to a 1990 legislative mandate to decrease operational costs, the University of Maryland set up TQM/CQI to reduce numbers of middle administrators (19). If management function is to pass to faculty because of financial exigencies, then faculty must be prepared to sacrifice discipline interests for the broader institutional welfare (20). Survey results show that faculty desire participative governance, but are

not prepared to compromise discipline activities.

22. It is better to be rewarded for one's contributions as a team member rather than success in one's professional discipline.

a.)	Agree strongly	2	b.)	Agree somewhat	8
c.)	**Disagree somewhat**	**22**	**d.)**	**Disagree strongly**	**6**
e.)	No opinion	6			

Comment - The teamwork or "ecosystem" of TQM/CQI attempts to displace the "ecosystem" of academic discipline-bias (9). The collegial culture will oppose the team work concept because most faculty members are self-motivated and generally successful in entrepreneurial research. On the other hand, a la TQM/CQI, because they are internally driven, they find joy in their work (21).

23. It is better to be recognized as an educator rather than, for instance, as a historian.

a.)	**Agree strongly**	**6**	**b.)**	**Agree somewhat**	**17**
c.)	**Disagree somewhat**	**11**	**d.)**	**Disagree strongly**	**4**
e.)	No opinion	5			

Comment - See above.

24. The focus of educators should be on learning rather than teaching.

a.)	**Agree strongly**	**8**	**b.)**	**Agree somewhat**	**18**
c.)	Disagree somewhat	11	d.)	Disagree strongly	4
e.)	No opinion	2			

Comment - Faculty opinion is generally consistent with TQM/CQI theory (4, 11, 14) on this point. Compare

with the ranking dictated by MBO in question #1.

25. Giving grades can create "fear in the work place" (classroom).

a.)	**Agree strongly**	**2**	**b.)**	**Agree somewhat**	**23**
c.)	**Disagree somewhat**	**11**	**d.)**	**Disagree strongly**	**8**
e.)	No opinion	0			

Comment - At this time there is a national debate as to whether grading and competition for grades is beneficial or harmful for learning, this is reflected by the divided responses. Kohn (5) cites several studies that conclude that grading has a negative effect on learning.

26. Administration use of student evaluations of a faculty member's teaching persona can create "fear in the work place."

a.)	**Agree strongly**	**10**	**b.)**	**Agree somewhat**	**22**
c.)	Disagree somewhat	9	d.)	Disagree strongly	8
e.)	No opinion	0			

Comment - interesting! Compare with question #26! Performance evaluation of workers may also create fear (6, 22).

27. One effect of student evaluations of instructors is homogenization of the "teaching persona."

a.)	**Agree strongly**	**6**	**b.)**	**Agree somewhat**	**18**
c.)	**Disagree somewhat**	**14**	**d.)**	**Disagree strongly**	**5**
e.)	No opinion	1			

Comment - Many questionnaires, for example the one used at DeKalb College, evaluate personal attributes

of the teacher (MBO), while largely ignoring the TQM question of whether learning has occurred (13, 23). Implied within DeKalb College questions is the image of the ideal teacher who is "enthusiastic, "motivating, "challenging, "clear, "fair, "polite, and one whom the student "would recommend to other students." Idiosyncratic teaching methods, such as confrontation to stimulate thought and debate, are apparently discouraged when the results are tied to performance appraisals for merit raises and promotions. Cholakian called this approach a "Nielsen Rating" of classroom success (23).

28. Competition among instructors for merit pay increases and promotions improves the education of our students.

a.)	**Agree strongly**	**3**	**b.)**	**Agree somewhat**	**17**
c.)	**Disagree somewhat**	**12**	**d.)**	**Disagree strongly**	**11**
e.)	No opinion	1			

Comment - Again the ideological debate - is competition good or bad? Is the Georgia legislature's mandate for merit pay good or bad for education? Why do legislatures and Governors construct goals for education? Because they are MBO advocates!

29. Competition among students for grades and awards improves the education of our students.

a.)	Agree strongly	5	b.)	Agree somewhat	20
c.)	Disagree somewhat	16	d.)	Disagree strongly	0
e.)	No opinion	1			

Comment - Is competition for grades good or bad? Gray (3) made the case for harmful effects. In my experience it's good for the "winners" and bad for the "losers."

30. To maintain tenure status, continuous improvement of skills must be in evidence.

a.)	**Agree strongly**	**11**	**b.)**	**Agree somewhat**	**16**
c.)	Disagree somewhat	6	d.)	Disagree strongly	5
e.)	No opinion	1			

Comment - TQM/CQI propounds continuous employee education and the improvement of job skills (1, 4, 6).

31. I believe that regarding the process of institutional management: (Circle all that apply) [This question is from a smaller 1993 questionnaire in manuscript. The wording follows Hossler (8).]

a. Intent precedes action - goals control institutional activities 7

b. Action precedes intent - goals are retrospective interpretations of what works 6

c. *a* and *b* are complementary 15

Comment - TQM rejects MBO goal-setting. Are goals backward or forward looking statements of intent (1,8)? This study and Hossler's (8) find that some faculty believe that making intentions to act (setting goals) and focusing on the actions alone are both valuable approaches and may be complementary. If MBO is done without a predominant focus on means and actions, or the goals are set only by higher administration, or if the goals are vague and not assessable, then the MBO is incompetent for faculty (7).

Conclusion

In the near future, TQM may be carried out at an institution of higher education due to legislative mandate for reductions in the cost of operations or for philosophical reasons. Where any system of management is applied to faculty, it is important to build consensus on its principles or faculty may resist those changes passively or openly (7). The inertia of discipline bias must be overcome to do quality management and improvement. This survey shows areas of agreement among faculty on TQM concepts that exist in an MBO management system, before implementation of TQM. A new TQM/CQI administration would build on these areas of agreement and

educate faculty accordingly. Quality management offers a hopeful vision of colleges where students and the external community are better served by an organization that fosters team work and respect for all the individuals within the learning institution.

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